

## ORGANIZATIONAL AMBIDEXTERITY – THE RESULTS OF BIBLIOMETRIC ANALYSIS

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**Purpose:** Organizational ambidexterity is a promising concept in management science. It is defined as the ability of a company to leverage existing resources by increasing the productivity of current products and services while exploring development niches. The aim of the article is to identify the leading research areas within organizational ambidexterity based on bibliometric analysis carried out on a collection of scientific articles and conference papers indexed in the Scopus database.

**Findings:** Data visualisation was prepared using VOSviewer software (version 1.6.15), which allows analysis of the frequency of keywords in the analysed dataset and, at the same time, an analysis of their co-occurrence with other keywords. The article presents visualisations in the form of both a label view and a density view. Using the VOSviewer software, a summary of 2255 keywords was generated based on the uploaded set of publications and a dictionary allowing the combination or deletion of individual terms. The final map consisted of 36 keywords grouped into six clusters. The theoretical contribution of the paper consists in the identification of six clusters revolving around the issue of organisational ambidexterity. The clusters refer to 1) the relationship between organisational ambidexterity and a company's ability to innovate, 2) organisational ambidexterity and dynamic capabilities, 3) perception of organisational ambidexterity as a useful framework of product development 4) perception of organisational ambidexterity as a framework to support human resource management, 5) the notion of exploitation and exploration and 6) contextual ambidexterity.

**Research limitations/implications:** The analysis revealed a clear trend away from analysing structural and temporal ambidexterity in companies towards attributing more importance to individual ambidexterity which may be an interesting subject of future research inquiry. A limitation of the study is that it was based on publications from a single database, therefore it is interesting to analyse comparisons between other databases such as Web of Science or IEEE.

**Originality/value:** The article fills the cognitive gap in demonstrating the latest trends in the research field. The findings could serve as a guide for researchers who aim for better understanding of the main progress and promising research trends in the field of organisational ambidexterity.

**Keywords:** bibliometric analysis, organisational ambidexterity, VOSviewer software.

**Category of the paper:** Research paper.

## 1. Introduction

Organisational ambidexterity is a paradox in organisational management. Nonetheless, the existence of organisational paradoxes, contradictions and conflicts is crucial to keep the business viable and enable it to adapt to a changing and uncertain environment (Lewis, 2000; Poole, Ven, 1989). Although a large body of work on organisational tensions can be identified in the literature, Smith maintains that “we still know little about the specifics and management of strategic paradoxes” (Vafeas, Hughes, 2020, p. 1592). On the other hand, as Mesjasz aptly notes, the increasing complexity of modern organisations contributes to the increasing role of paradoxes in management theory and practice (Mesjasz, 2016). According to Czakon, paradoxes refer to contradictions that affect the behaviour of people in organisations, accompany the decisions of managers or are embedded in the development strategies of companies (Czakon, 2012). Czakon emphasises that paradoxes in contemporary management science research focus on the most innovative and mobilising promises of corporate success, among which he lists organisational ambidexterity (Czakon, 2012).

As organizational ambidexterity is still very promising and dynamically evolving concept in the management science, the purpose of the article is to present a holistic overview by the presentation of the main research trends as well as the new promising research ideas.

Thus, the considerations presented in this article fill the cognitive gap in demonstrating the latest trends in the area of organizational ambidexterity. In order to achieve the goal set in the article, a systematic literature review was conducted with the use of bibliometric analysis carried out on a collection of scientific articles and books indexed in the Scopus database. Bibliometric analysis served as a method of bibliographic counting to evaluate and quantify the literature growth, which could navigate scholars in grasping the development characteristics of the field and guide their future research (Shi et al., 2021). An additional objective is to identify the most influential and recent work in this area.

## 2. Literature review

Organisational ambidexterity is the ability of a company to leverage existing resources by increasing the productivity of existing products and services while exploring new territories and development niches in the areas of technology, markets, products or business models. Its possession is recognised in the existing published works as a critical source of competitive advantage (Eisenhardt, Martin, 2000; Fang et al., 2010; Levinthal, March, 1993).

In the body of literature, there could be identified many recognitions of organisational ambidexterity. Examples of definitions are presented in the Table 1.

**Table 1.***The examples of definitions of organizational ambidexterity*

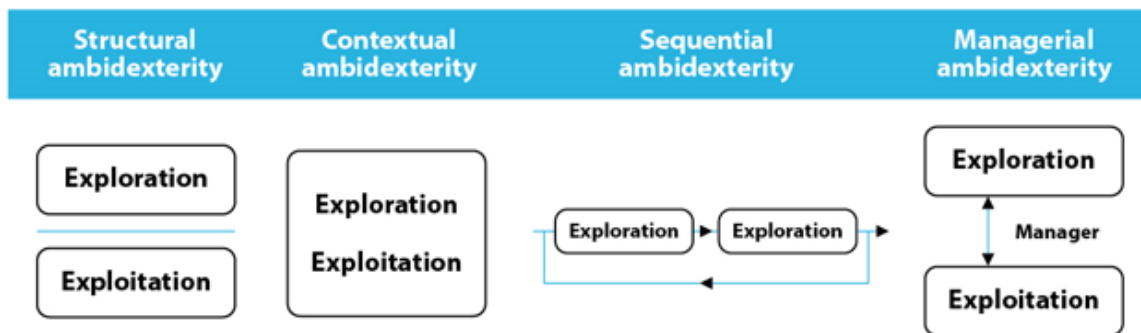
<b>Definition</b>	<b>Author(s)</b>
The ability of an organisation to engage in exploitation to ensure its current viability, while devoting sufficient energy to exploration to ensure its future viability.	Levinthal, March (1993), p. 105
Ability to simultaneously create incremental and incremental innovations.	Tushman, O'Reilly (1996), p. 24
The ability of the organisation to create structures and systems designed to mitigate conflicting tensions.	Gibson, Birkinshaw (2004), pp. 210-211
Manager's ability to reconcile exploration and exploitation activities within a defined unit of time.	Mom et al. (2009), p. 812
Ambidexterity reflects the tension or conflict of strategic pursuits of companies in the face of limited resources, such as the ability to pursue exploitative and exploratory innovation strategies.	Du, Chen (2018), p. 44
A strategic capability to reconcile the conflicting demands of exploration and exploitation. This capacity can be referred to the level not only of the organisation as a whole, but also of the group or individual.	Zakrzewska-Bielawska (2018), p. 35
Ambidexterity is a concept that allows a firm to simultaneously develop exploration and exploitation in order to achieve superior performance and it requires the adoption of two important organizational cultures, willingness to cannibalize (WTCA) and willingness to combine existing knowledge (WTCO), which allow firms to attain superior performance through the implementation of both radical and incremental (i.e., ambidextrous) innovations.	Harmancioglu et al. (2020), pp. 46-47.

Source: own study.

Although the above definitions emphasise different aspects, e.g. the need for separate structures within the company or the competence of managers to manage ambidexterity, all definitions stress the need to reconcile the contradiction between exploitation and exploration. The most original interpretation of organisational ambidexterity can be found in the work of Harmancioglu et al. (2020), who introduce into this definition the notion of cannibalisation and the willingness to combine existing knowledge by adopting two different organisational cultures in the organisation. Just like Tushman and O'Reilly (1996), they highlight the important role of organisational ambidexterity in creating incremental and radical innovation.

According to Levinthal and March, the fundamental problem facing an organisation is to engage in enough exploitation to ensure its current viability, while devoting enough energy to exploitation to ensure its future viability (Levinthal, March, 1993). Exploration is expressed in experimentation, continuous searching, while exploitation is linked to increasing productivity, achieving short-term goals, implementing innovations. Hence, exploitation and exploitation require different strategies, different organisational structures and operating contexts. Researchers of the topic agree in their view that the ambidextrous organisation faces a trade-off between the appropriate use of existing competences and the exploration of new potential opportunities for organisational development (Garcia-Morales et al., 2007; Alänge, Steiber, 2018; Baškarada, 2016; Juni et al., 2013).

Several forms of organisational ambidexterity can be identified in the existing published works: structural ambidexterity, contextual ambidexterity, sequential ambidexterity, and managerial ambidexterity (Figure 1).



**Figure 1.** Types of organizational ambidexterity.

Source: F. Constant, R. Calvi, T. E. Johnsen, “Managing tensions between exploitative and exploratory innovation through purchasing function ambidexterity”, *Journal of Purchasing and Supply Chain Management* 26 (2020), p. 2.

**Structural ambidexterity** is expressed in the spatial separation of organisational cells within a company that take paradoxical actions (Jansen et al., 2020). In this view, structural ambidexterity can be thought of as a system of dividing the organisation into sub-units, each of which establishes specific attributes in line with the requirements of the external environment (Mahmood, Mubarik, 2020). The author of the article shares the view of Zakrzewska-Bielawska expressed in the statement that their separation is justified by the total dissimilarity of their tasks, but on the other hand, such isolation and lack of direct links between them may cause that the ideas of exploration groups will not be implemented due to the mismatch with the basic exploitation tasks (Zakrzewska-Bielawska, 2015, p. 107).

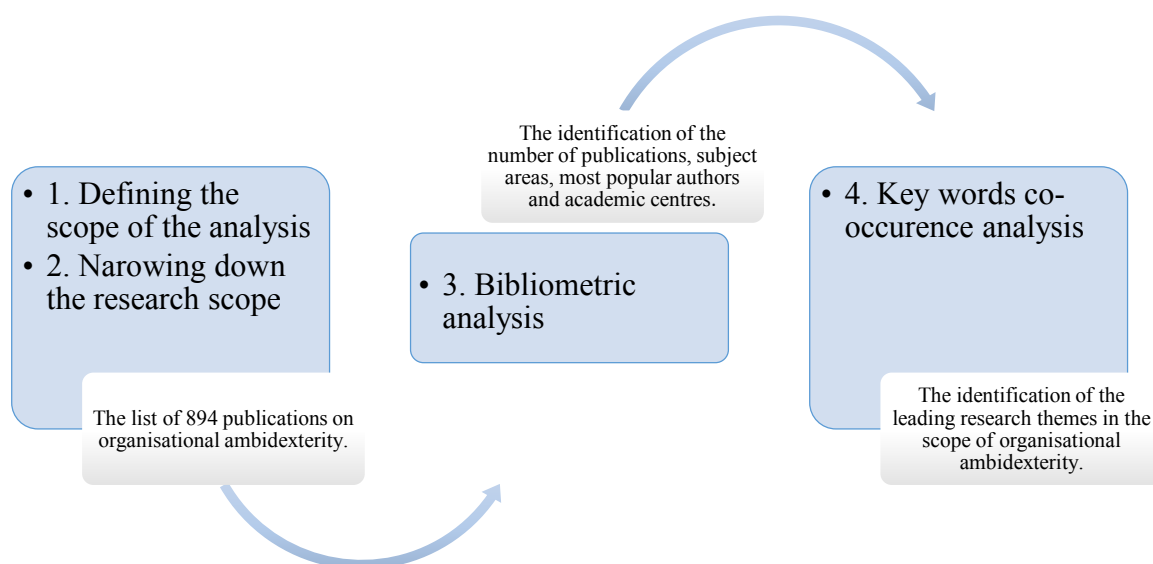
**Contextual ambidexterity** is based on cultural values and contextual norms (Zakrzewska-Bielawska, 2015; Gibson, Birkinshaw, 2004). The organisational context is defined by the co-occurrence of hard elements, such as discipline and task scope, and soft elements, such as support and trust. This approach assumes that each employee, in his or her daily work, makes a constant trade-off between profit-maximising activities in the short term and activities aimed at better adapting the company to the dynamically changing environment (Zakrzewska-Bielawska, 2015).

**Sequential ambidexterity**, as opposed to structural ambidexterity, introduces a temporal separation perspective to exploitation and exploration activities in the organisation (Good, Michel, 2013). It comes down to the sequence of exploitative and exploratory activities in the enterprise, which do not occur in parallel, but in a sequential manner. Sequential ambidexterity is consistent with the concept of dynamic capabilities of the enterprise (Mahmood, Mubarik, 2020). Due to the constantly changing environment, companies are constantly having to adapt their structures and processes, alternating between longer exploitation periods and exploitation periods (Raisch, Birkinshaw, 2008).

Apart from the types of organisational ambidexterity most frequently described in the literature: structural, contextual, managerial and sequential ambidextrousness, the following types can also be identified in the literature: harmonic, cyclic, split and reciprocal ambidexterity. In the Polish existing published works, these types of ambidextrousness are described in detail by Zakrzewska-Bielawska (2015).

### 3. Methodology of the research

To reach the goal of the article, a systematic literature review was carried out. The author of the article followed the modified methodology posited by Glinska and Siemieniako (2018) consisting of four main stages: 1) defining the scope of the analysis, 2) narrowing down the research scope, 3) bibliometric analysis and 4) key -words co-occurrence analysis (Figure 2).



**Figure 2.** Methodology of the research.

Source: own study.

In the first stage of the research process the scope of the analysis was defined. For this purpose, sets of publications were generated in the Scopus scientific database. The criterion for selecting the database for bibliometric analysis was the number of publications in the area of organisational ambidexterity. Compared to other available databases, the Scopus database contained the largest number of publications from this thematic area. The criterion for the selection of publications was the appearance of the word 'ambidexterity' or 'organisational ambidexterity' in the title of the publication, the abstract or in the keywords indicated by the authors.

Next, the thematic scope of the publications was narrowed down to four areas: 1) business, management and accounting, 2) social sciences, 3) decision sciences, and 4) economics, econometrics and finance. The following were included in the analyses: scientific articles, chapters from books and post-conference materials. A total of 894 publications were retrieved from the Scopus database. The query entered into the database took the following form:

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( TITLE-ABS-KEY ( ambidexterity ) ) AND ( organisational AND ambidexterity ) AND
( LIMIT-TO ( DOCTYPE , "ar" ) OR LIMIT-TO ( DOCTYPE , "cp" ) OR LIMIT-
TO ( DOCTYPE , "ch" ) ) AND ( LIMIT-TO ( SUBJAREA , "BUSI" ) OR LIMIT-
TO ( SUBJAREA , "SOCI" ) OR LIMIT-TO ( SUBJAREA , "DECI" ) OR LIMIT-
TO ( SUBJAREA , "ECON" ) ) AND ( LIMIT-TO ( EXACTKEYWORD , "Ambidexterity" )
OR LIMIT-TO ( EXACTKEYWORD , "Organizational Ambidexterity" ) ).
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The third stage of the research process concerned bibliometric analysis which allowed to identify the main subject areas of the existing published works in the period 1999-2022, the most active authors and academic centres.

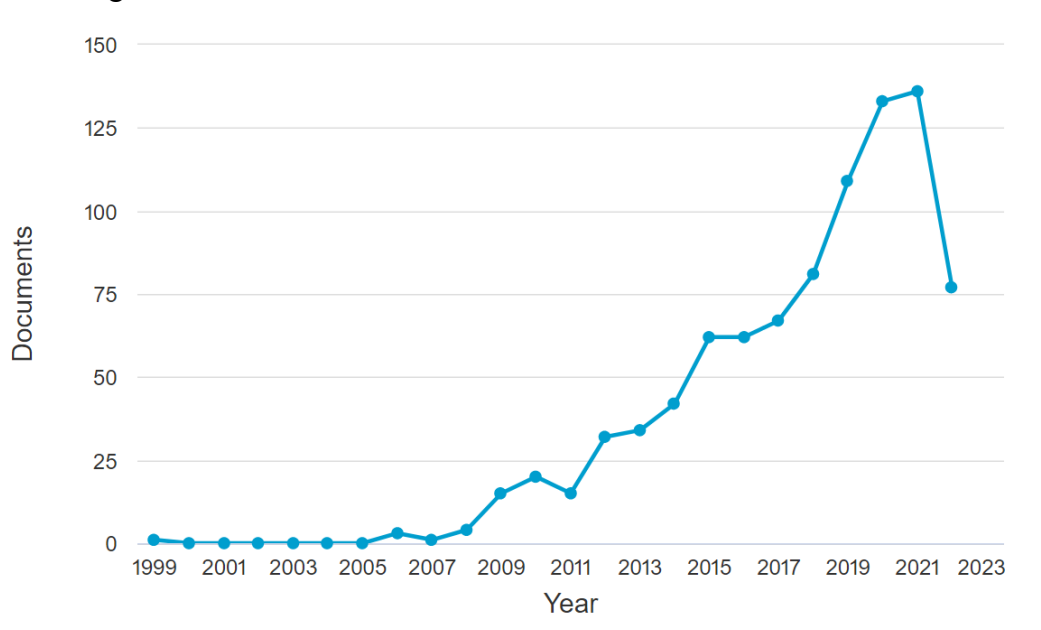
In the last (fourth) stage of the research process, co-occurrence analysis was performed. Co-occurrence analysis of keywords uses the assumption that keywords are an adequate description of the content of a scientific publication (Jurczuk, 2019). It involves identifying the coincidence of researcher-defined terms of interest in relation to publication titles, keyword lists and abstracts. In the existing published works, it is possible to identify publications that refer to the limitations of using this method. These include the omission of word relationships that occur in distinct forms, as well as the creation of a distinct meaning, the context of use of specific terms. As pointed out by Jurczuk (2019), this can be eliminated by defining appropriate glossaries of terms or by seeking expert consultation.

Data visualisation was prepared using VOSviewer software (version 1.6.15), which allows analysis of the frequency of keywords in the analysed dataset and, at the same time, an analysis of their co-occurrence with other keywords (Gudanowska, 2017). This application is particularly useful when working with multi-element datasets (Rollnik-Sadowska, 2019). The programme allows the generation of visualisations in the form of a label view and a density view. The label view form refers to the frequency of occurrence of given elements in the network. It provides information on the frequency of co-occurrences of keywords that are placed on a plane. The frequency of the label in the dataset is visualised by the size and colour of the element. The distance between labels also plays a role in the visualisation. The smaller the distance between labels, the more frequent their co-occurrence in the analysed set. Elements located in the centre of the map, are most frequent in the dataset and have a relationship with a large and more diverse number of other elements. In contrast, the elements located at the edge of the plane on which the visualisation is presented are characterised by a small number of connections with the remaining elements of the map. Moreover, they may even form isolated, unrelated fields (Gudanowska, 2017; Rollnik-Sadowska, 2019). The label view form also makes it possible to distinguish clusters of the most frequently occurring keywords.

These clusters are marked with different colours. A second form of visualisation is the density view, in which clusters of the most frequently occurring elements are colour-coded. In the next section, two types of visualisations are presented.

## 4. Results

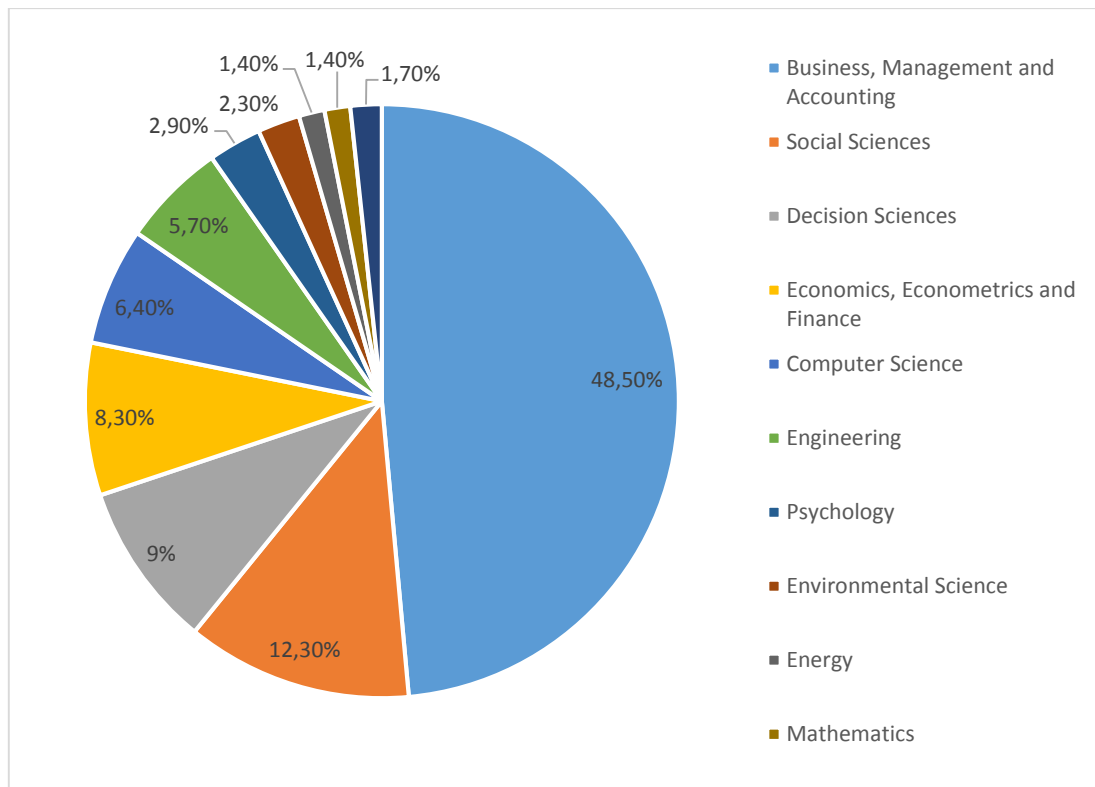
Based on the visualisation of the data presented in Figure 3, it can be seen that the number of publications in the field of ambidexterity and organisational ambidexterity is steadily increasing.



**Figure 3.** The number of ambidexterity and organizational ambidexterity publications from 1999-2022. Source: own study.

To date, the highest numbers of publications have been recorded in 2020 (133 publications) and 2021 (136 publications). The number of publications in 2022 is slightly lower (77 publications) due to the incomplete year of analysis (the bibliometric survey was conducted in June 2022).

Figure 4 shows the main subject areas of publications according to the categories provided by the Scopus database.



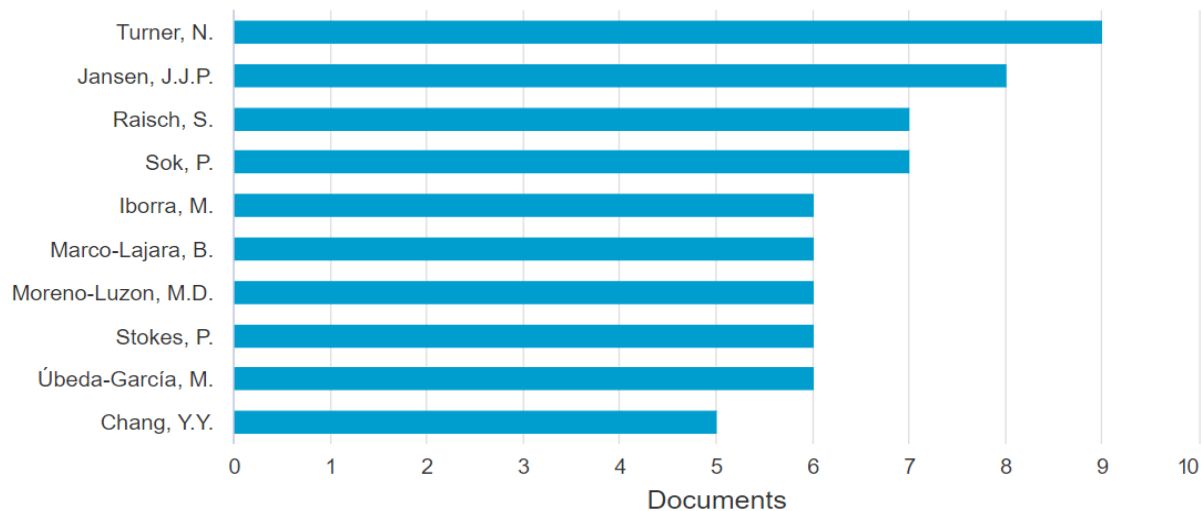
**Figure 4.** Main subject areas of publications on ambidexterity and organizational ambidexterity based on the Scopus database.

Source: own compilation based on data generated from Scopus database.

The analysis confirmed the author's assumption that most research in the field of organisational ambidexterity revolves around management science. Although it is possible to identify publications presenting adaptations to areas such as psychology, computer science or engineering, to name but a few. Almost 50% of the publications are in the subject area of business, management and accounting. 12,30% of the publications are represented by social sciences. Approximately 8-9% of the publications come from decision sciences (9%) and economics, econometrics and finance (8,3%). The remaining subject areas are represented by a low percentage of publications.

The analysis of the data on publications included in the Scopus database also made it possible to identify the leading academics working on the topic of organisational ambidexterity and the most active academic centres in this field (Figure 5).



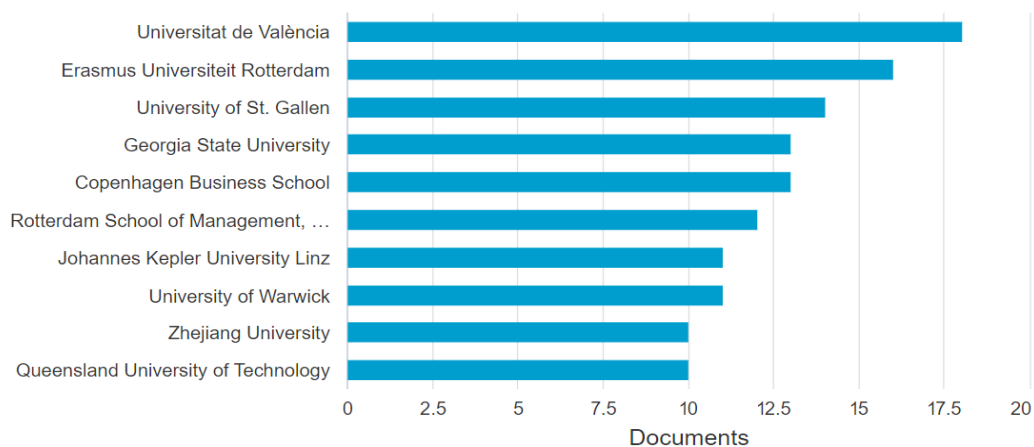


**Figure 5.** The most popular authors dealing with the issue of organizational ambidexterity.

Source: Scopus database.

From the data presented in Figure 5, it can be seen that the largest number of papers on organisational ambidexterity have been written by N. Turner, J.J.P Jansen, S. Raisch and P. Sok. Other active authors writing on organisational ambidexterity are M. Iborra, B. Marco-Lajara, Moreno-Luzon, Stokes Ubeda-Garcia and Chang.V. Savon, P. Stokes and H.W. Volberda.

In turn, the most active academic centres on the topic of ambidextrousness and organisational ambidexterity are presented in Figure 6.



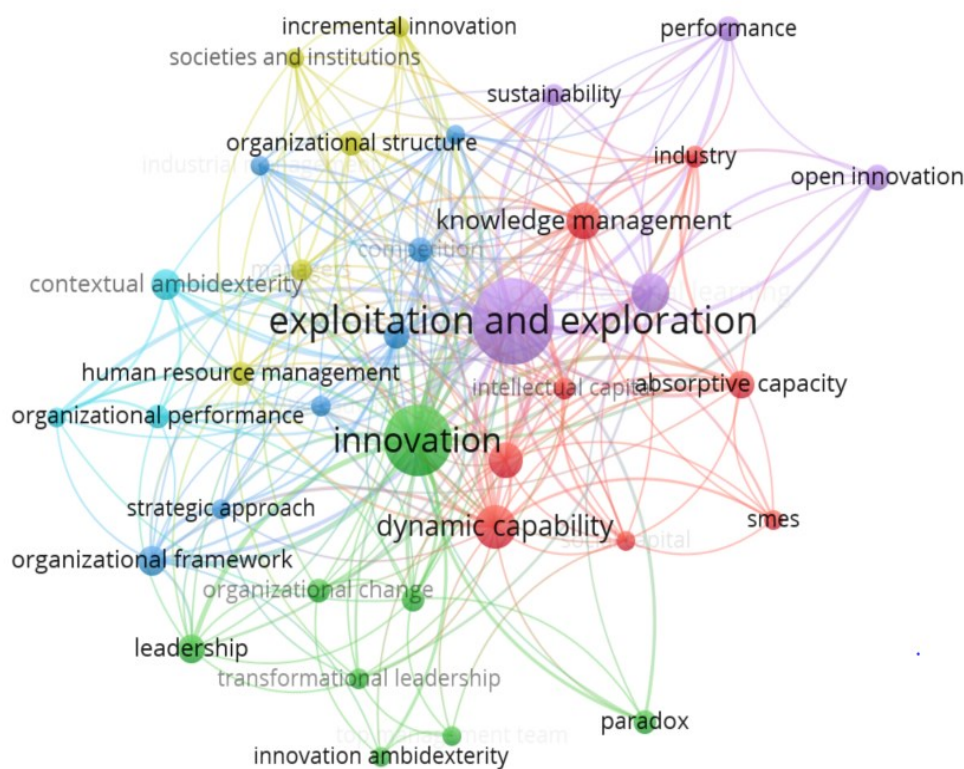
**Figure 6.** The most active academic centres dealing with the issue of organizational ambidexterity.

Source: Scopus database.

Based on the data presented in Figure 5, it can be seen that the largest number of organisational ambidexterity papers were produced at University of Valenzia, Erasmus Universitat Rotterdam and Universitat of St. Gallen.

Taking into account data on the basic description of publications by keywords in the Scopus database from 1999 to 2022, a map was prepared on the co-occurrence of keywords entered by the authors of publications (Figure 7). Using the software, a summary of 2255 keywords was generated based on the uploaded set of publications and a dictionary allowing the combination or deletion of individual terms. In order to ensure transparency of the visualisation, keywords occurring at least nine times in the analysed collection were included. The choice of this form of visualisation of the results obtained, despite the criticism of this approach noted in the literature, is justified by its significant cognitive and utilitarian values (Raan, 2003; Small, 1999; Jurczuk, 2019).

For the purpose of analysing, standardising and visualising the data, the author developed a glossary of terms, in which words or phrases with the same meaning were combined, e.g. exploration and exploitations versus exploration and exploitation, ambidextrous organisations versus ambidextrous organisation, dynamic capabilities versus dynamic capability, and words or phrases that did not seem to be related to the area of organisational ambidexterity such as natural resources exploration or those referring to the geographical area of the analyses, e.g. China, or the nature of the analyses presented in the publications, such as case studies, were removed. In order to obtain transparency and clarity of visualisation, the words constituting search criteria, such as ambidexterity and organisational ambidexterity, were removed from the set of keywords, due to the fact that the entire set of analysed publications refers to relations with the above-mentioned words. A similar approach was used in the work of Gudanowska and Koniuk (2020). This made it possible to obtain a clear map of the co-occurrence of keywords (Figure 7).



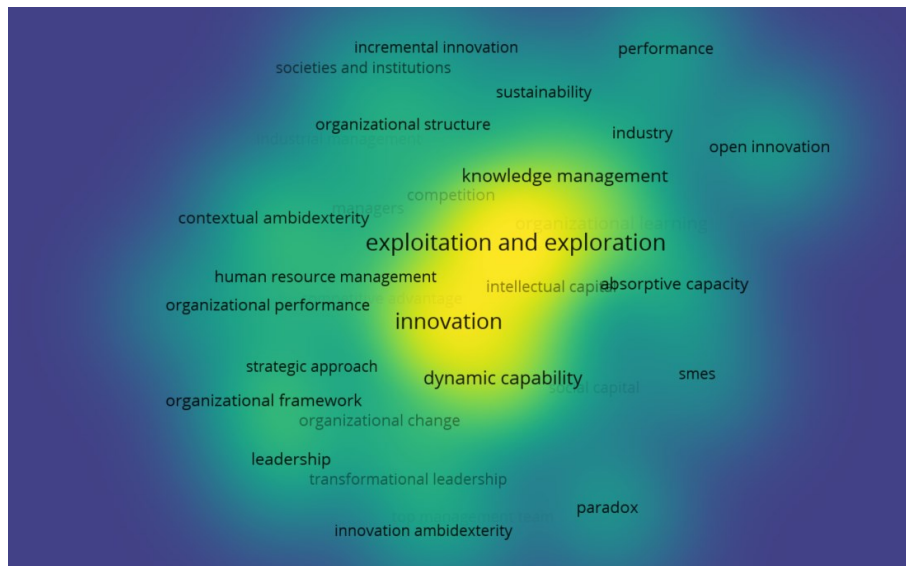
**Figure 7.** Map of co-occurrence of keywords characterising publications in the area of ambidexterity and organisational ambidexterity (by indication of the term in the title, abstract or keywords) in the Scopus database from 1999 to 2022.

Source: own development using VOSviewer software.

In the central part of the map are the most frequently occurring keywords. The frequency of occurrence of a given term is visualised by varying the size of the nodes representing each of the terms that appear, as well as the font size of the node name. Based on the analysis of Figure 7, it can be discerned that the network is quite dense and characterised by numerous connections. The central terms that appeared most frequently co-occurring with the terms: “ambidexterity” and “organisational ambidexterity” were the terms exploitation and exploration (also most frequently co-occurring with the other terms in the network), innovation, and dynamic capabilities. The following phrases also appeared frequently in connection with the context of ambidexterity: organisational learning (35 occurrences), knowledge management (30 occurrences), firm performance (27 occurrences) and contextual ambidexterity (21 occurrences).

The second form of visualisation possible in VOSviewer is the density view, in which clusters of the most frequent elements are colour-coded (Gudanowska, 2015). This is a keyword density map. Each keyword that appears on the map is surrounded by a colour from blue to green to yellow, which indicates the frequency of occurrence of the keyword in the analysed dataset (Eck, Waltman, 2020). Phrases surrounded by yellow represent those most frequently

cited. Density view of keywords characterising publications in the area of ambidexterity and organisational ambidexterity is presented in Figure 8.



**Figure 8.** Density view of keywords characterising publications in the area of ambidexterity and organisational ambidexterity (by indication of the term in the title, abstract or keywords) in the Scopus database from 1999 to 2022.

Source: own development using VOSviewer software.

For keywords relating to ambidexterity and organisational ambidexterity, the most frequently cited words in the dataset analysed are exploitation and exploration, innovation and dynamic capability.

## 5. Discussion

The co-occurrence analysis of keywords was the starting point for confronting the results obtained with the existing published works. Due to the fact that the temporal scope of the organisational ambidexterity bibliometric research carried out by the author of the article, differs from those available in the body of literature, this section identifies the key papers relevant to the cluster and the subject areas of the most recent publications addressing the topics presented in the clusters.

One of the functionalities of the VOSviewer software is to combine the analysed data set into clusters. These clusters are marked with different colours on the map, where each cluster is assigned a different colour. The combination of given phrases in a cluster indicates their most frequent co-occurrence (this does not mean that a phrase does not occur with the phrases from the other clusters, but this happens far less frequently). The map depicted in Figure 7 contains 36 keywords grouped into six clusters.

The first cluster refers to the relationship between organisational ambidexterity and a company's ability to create innovation. It includes terms such as innovation, innovation ambidexterity, leadership, management, organisational change, paradox, top management team, and transformational leaders. The most influential paper presenting the relationship between ambidexterity and innovations was published by He and Won (2004) who investigate how exploration and exploitation can jointly affect company performance in the context of an enterprise approach to innovation of a technological nature. On the basis of 206 manufacturing companies, they demonstrate that the interplay between exploration and exploitation is positively related to sales growth rate. Other important works in this cluster concern the antecedents, outcomes and moderators of organisational ambidexterity (Raish, Birkinshaw, 2008) and balancing exploitation and exploration for sustained performance (Raisch et al., 2009). The newest works in this cluster revolve around microfoundations and specific managerial actions that facilitate the implementation and operation of an ambidextrous strategy (Balarezo, Nielsen, 2022) or antecedents enabling team ambidexterity (Dean, 2022).

The second is a cluster referring to the relationship between organisational ambidexterity and dynamic capabilities, which most often co-occur with terms such as absorptive capacity, firm performance, industry, intellectual capital, knowledge management, small and medium-sized enterprises (smes) and social capital. The most highly cited work in this cluster focuses on ambidexterity as a dynamic capability where authors posit that efficiency and innovations need not to be strategic tradeoffs and emphasize the leading role of highly experienced teams in building dynamic capabilities (O'Reilly, Tushman, 2008). The authors of the newest works treat dynamic capabilities as mediator strengthening the relationship between knowledge absorption and export performance (Hoque et al., 2022) or integrate the theories of transformational leadership, ambidexterity and dynamic capabilities (Karippur, Balaramachandran, 2022).

The third cluster, which includes seven keywords, refers to the perception of organisational ambidexterity as a useful theoretical framework for product development and building competitive advantage. It is formed by concepts such as competition, competitive advantage, industrial management, organisational framework, product development, project management, strategic approach. The most popular work relevant for this cluster concerns presentation of the results of seven leading companies in product design. The authors conclude that managing paradoxes requires “paradoxical management approaches” and that paradoxes “can fuel as well as frustrate innovation” (Andriopolous, Lewis, 2010). More recent publications present the recommendations on how SME could enhance their performance to gain a competitive advantage as well as establish the mediating role of ambidexterity in entrepreneurial value creation (Garousi et al., 2022). A thought-provoking paper in this cluster deals with the issue of achieving organisational ambidexterity in the situation when niches could become constraints by the introduction of a notion of organisational inherited identities (Sirkant, Donovan, 2022).

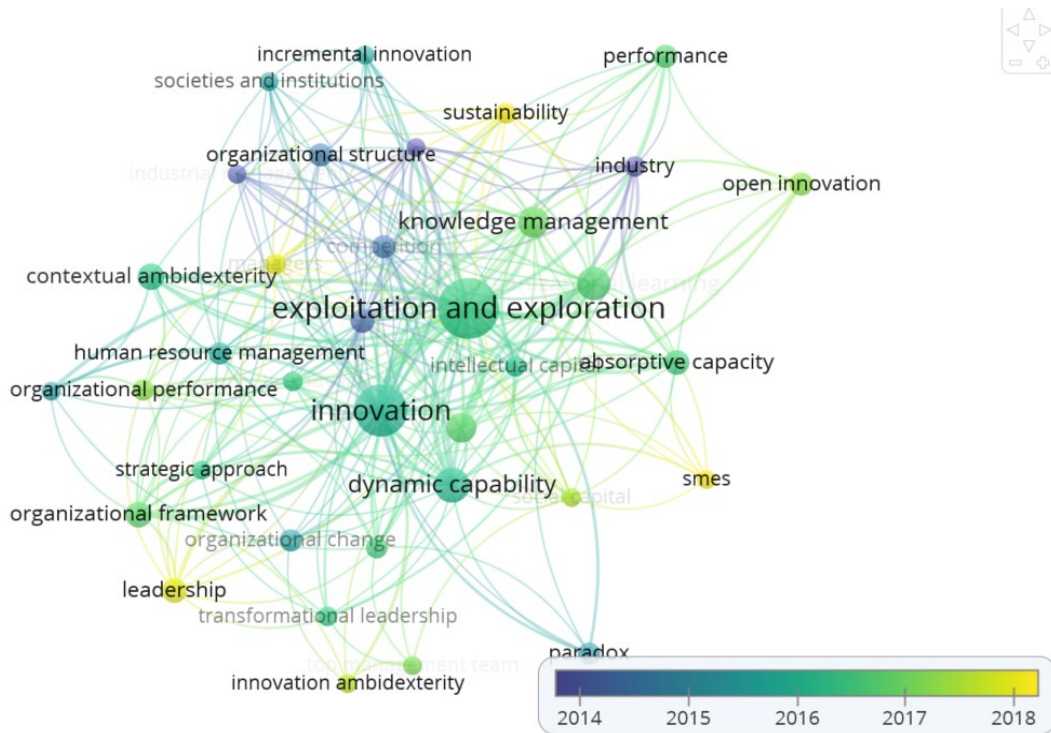
The fourth cluster, which includes four keywords, refers to the use of organisational ambidexterity as a framework to support human resource management. The cluster includes keywords such as human resource management, managers, organisational structures societies and institutions. Relevant works in this cluster answer the questions if human resource management generates ambidextrous employess for ambidextrous learning (Prieto, Martin-Perez, 2015) , demonstrate an intellectual capital perspective (Turner et al., 2015) or present structural perspective of human resource management to achieve ambidextrous learning (Diaz-Fernandez et al., 2017).

The fifth cluster is centred around the notion of exploitation and exploration, which most often co-occur with terms such as open innovation, organisational learning, performace and sustainability. The works on exploitation and exploration are the most highly cited which is not surprising as they form the theoretical basis for the concept of ambidexterity. The most influential works concern an empirical test of the ambidexterity hypothesis (He, Wong, 2005), deal with the interplay between exploration and exploitation (Gupta et al., 2006) or discuss the antecedents, outcomes and moderators of organizazzional ambidexterity (Raisch, Birkinshaw, 2008).

The last cluster (sixth) refers to publications built around contextual ambidexterity. It is formed by terms such as contextual ambidexterity, organisational context, organisational performance. The theme of contextual ambidexterity is built upon the seminal work of Gibson and Birkinshaw (2004) who demonstrate that a context comprising stretch, discipline, support and trust have a positive impact on contextual ambidexterity.

In order to identify emerging research trends, it also seems important to learn about the latest publications in the area of organisational ambidexterity. The Vosviewer software also allows the creation of visualisations that are dynamic in nature, i.e. that take the time factor into account. This type of visualisation is referred to as overlay visualisation.

The colour of the elements present in this visualisation, is assigned based on the ratings of the element. By default, the colours range from blue (lowest score) to green and yellow (highest score). The visualisation is also accompanied by a legend, which is located in the bottom right-hand corner of the visualisation. In the visualisation presented in Figure 9, the legend refers to the period of most frequent keyword occurrence from 2014 to 2018. By changing the legend to the period 2014-2022, the yellow colour in the figure is lost, hence the most recent research themes are not clearly visible. The colours of the elements on the map are determined by the average publication date of the article (average publication year) in which the keywords occurred.



**Figure 9.** Overlay visualisation of keywords characterising publications in the area of ambidexterity and organisational ambidexterity (by indication of the term in the title, abstract or keywords) in the Scopus database from 1999 to 2022.

Source: own development using VOSviewer software.

From an analysis of the data in the chart, it can be seen that the most recent research themes concern balancing ambidexterity in small and medium-sized enterprises (Chang, Hughes, 2012; Soto-Acosta et al., 2018), the role of ambidextrous leadership (Lawrence et al., 2022), sustainability (sustainable sourcing and agility performance (Shan et al., 2022) and managing tensions in sustainable development (Chen, Eweje, 2022).

## Summary

The bibliometric analysis presented in this article provides the main research trends within the subject of organisational ambidexterity and demonstrates progress of the research field. It serves as an orientation and guide for researchers who aim for better understanding of the main progress, promising research concepts and maturity of the field. The analysis of the research themes, the most popular authors and the most active academic research centres as well as the results of co-citation analysis show that the field is still evolving. The application of the VOSviewer software made it possible to distinguish six main research themes built around such terms, concepts and relationships as 1) the relation between ambidexterity and innovation, 2) the relationship between organisational ambidexterity and dynamic capabilities,

3) the perception of organisational ambidexterity as a useful theoretical framework for product development and competitive advantage building, 4) the use of organisational ambidexterity as a framework to support human resource management 5) exploitation and exploration and 6) contextual ambidexterity. The dynamic visualisation obtained in the VOSviewer software has highlighted recent research themes such as the use of organisational ambidexterity in small and medium-sized enterprises or the links between organisational ambidexterity and sustainability. The analysis also revealed a clear trend away from analysing structural and temporal ambidexterity in companies towards attributing more importance to individual ambidexterity and the importance of leadership in balancing those two tensions which may be a future interesting subject of research inquiry and consideration.

A limitation of the study was that it was based on publications from a single database, even though this database contained the largest number of records, therefore it is interesting to analyse comparisons between other databases such as Web of Science or IEEE. In addition, the analysis carried out may be characterised by a low representation of recent influential papers, which were less frequently cited due to their recent publication date.

## Acknowledgements

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